

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number
WO 2005/007579 A1

(51) International Patent Classification⁷: C02F 1/00,
1/44, B01D 61/02

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CII, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EG, ES, FI,
GB, GD, GE, GH, GM, IIR, IU, ID, IL, IN, IS, JP, KI,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PI, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(21) International Application Number:
PCT/CH2004/000461

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 21 July 2004 (21.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/CH03/00499 22 July 2003 (22.07.2003) CH

(71) Applicant (for all designated States except US): DCT
DOUBLE-CONE TECHNOLOGY AG [CH/CH]; Allmendstrasse 86, CH-3602 Thun (CH).

(72) Inventor; and
(75) Inventor/Applicant (for US only): STARK, John
[GB/CH]; Untere Zieg 3, CH-3665 Wattenwil (CH).

(74) Agent: AMMANN PATENT ATTORNEYS LTD.
BERNE; Schwarztorstrasse 31, CH-3001 Berne (CH).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

Declaration under Rule 4.17:

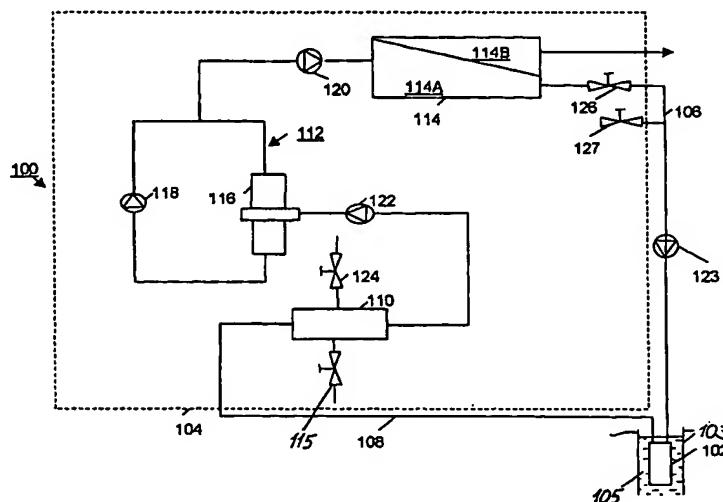
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: INTEGRATED WATER DECONTAMINATION PLANT AND WELL PUMP ARRANGEMENT



(57) Abstract: The present invention removes contaminants from well water without creating the problem of large volumes of waste liquid disposal. It uses double-cone devices (102, 116, 125) as pressure amplifiers which due to their lack of moving parts avoid the risk of additional contamination of the well and provide a prolonged lifetime. For toxic contaminants, a periodic purging of the concentrated contaminants is required. In the case of (sea) salt contamination, there is no waste brine to be continuously handled at all and the system may be run without interruption over an extended period. In this case, the brine is dumped into the well simply by periodically stopping the plant. The brine pours out of the double-cone unit(s) (102, 302) and due to its higher density, sinks down in the well without disturbing the operation of the purification plant.

WO 2005/007579 A1